

Serial No.: 10/815,423

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Applicants:

Date: September 16, 2008

Imamura et al

Group Art Unit: 2162

Serial No.: 10/815,423

Examiner: Le, Thu Nguyet

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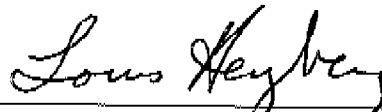
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Commissioner for Patents

Alexandria, VA 22313-1450

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Registration No. 41,500

Commissioner for Patents

Alexandria, VA 22313-1450

**RESPONSIVE AMENDMENT**

Sir:

This is in response to the phone discussion with the Examiner, today, Sept. 16, 08, to bring allowable matter in the response transmitted on Sept. 5, 08, to issuance. Examiner requested the response be sent by fax rather than e-mail.

Please consider the following:

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1 **LISTING OF THE CLAIMS**

2 What is claimed is:

3 1. (Currently amended) An extensible-markup-language Path Language (XPath) evaluating  
4 method comprising evaluating the XPath relevant to an extensible-markup-language (XML)  
5 document by use of a computer, said step of evaluating being carried out individually concerning  
6 inputted XML events, while subjecting the XML document to streaming processing, the step of  
7 evaluating XPath comprising:

8 a first step of serially inputting XML event strings constituting an XML document to be  
9 processed;

10 a second step of serially evaluating the XPath respectively relevant to the inputted XML  
11 events while subjecting the XML document to streaming processing and retaining information  
12 concerning a result of partial evaluation of the XPath in given storing means when the XPath is  
13 partially established with respect to a given XML event;

14 a third step of repeating the partial evaluation of the XPath along with the input of the  
15 XML event strings while considering the result of the partial evaluation retained in the storing  
16 means and evaluating that the XPath is established with respect to the XML document when the  
17 last part of the XPath is established; and

18 judging establishment of the entire XPath while accumulating results of said partial  
19 evaluation enabling evaluation of the XPath by use of said streaming processing,

20 wherein the second step includes the steps of:

21 generating an automaton for expressing the XPath to be evaluated; and

22 evaluating the XPath partially by allowing transition of a state of the automaton based on  
23 inputted respective XML events and retaining a result of the partial evaluation as the state of the  
24 automaton;

25 wherein the second step includes the steps of:

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\_\_\_\_\_ generating a first stack which expresses the XPath to be evaluated with a string of stack elements; and

\_\_\_\_\_ generating a second stack for analyzing a nested structure of the XML document to be processed based on respective inputted XML events and then evaluating the XPath partially by comparing the first stack with the second stack; and

\_\_\_\_\_ wherein the second step includes the steps of:

\_\_\_\_\_ serially constructing a document tree indicating a document structure of the XML document to be processed based on input of respective XML events; and

\_\_\_\_\_ evaluating the XPath along with construction of the document tree by use of the document tree including a part which has been constructed.

2. - 4. (Canceled)

5. (Currently amended) An XPath evaluating apparatus comprising:

an evaluation executing unit being embodied in a program storage device readable by machine, tangibly embodying a program of instructions, and employed for inputting XML event strings constituting an XML document and serially evaluating the XPath with respect to each of XML events while subjecting the XML document to streaming processing, said serially evaluating being carried out individually concerning inputted XML events, while subjecting the XML document to streaming processing, and while retaining information concerning a result of partial evaluation of the XPath when the XPath is partially established with respect to a given XML event, and evaluating that the XPath is established with respect to the XML document when the last step of the XPath is established;

an XML event transferring unit being embodied in a program storage device readable by machine, tangibly embodying a program of instructions, and employed for inputting the XML event strings constituting the XML document to be processed and serially transferring the XML event strings to the evaluation executing unit; and

a judging unit judging establishment of the entire XPath while accumulating results of said partial evaluation enabling evaluation of the XPath by use of said streaming processing;

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1 an automaton generating unit being embodied in a program storage device readable by  
2 machine, tangibly embodying a program of instructions, and employed for generating an  
3 automaton which expresses the XPath to be evaluated, wherein the evaluation executing unit  
4 performs partial evaluation of the XPath by allowing a state of the automaton generated by the  
5 automaton generating unit to perform transition based on the XML events transferred from the  
6 XML event transferring unit, and retains a result of the partial evaluation as the state of the  
7 automaton;

8 a stack generating unit being embodied in a program storage device readable by machine,  
9 tangibly embodying a program of instructions, and employed for generating a first stack which  
10 expresses the XPath to be evaluated with a string of stack elements,

11 wherein the evaluation executing unit performs partial evaluation of the XPath by  
12 generating a second stack for analyzing a nested structure of the XML document subject to  
13 processing based on the XML events transferred from the XML event transferring unit and then  
14 comparing the first stack generated by the stack generating unit with the second stack.

15 6. - 13. (Canceled)

16 14. (Previously presented) A program embodied in a program storage device readable by  
17 machine, tangibly embodying a program of instructions, and employed for controlling a computer  
18 to evaluate the XPath with respect to an XML document, the program causing the computer to  
19 execute the procedures for carrying out the steps of claim 1.

20 15. (Previously presented) An article of manufacture comprising a program storage device  
21 readable by machine, tangibly embodying a program of instructions for causing evaluation of  
22 the XPath relevant to an extensible-markup-language (XML) document, the program of  
23 instructions in said article of manufacture for causing a computer to effect the steps of claim 1.

24 16. (Original) A program storage device readable by machine, tangibly embodying a program of  
25 instructions executable by the machine to perform method steps for evaluating the XPath relevant

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- 1 to an extensible-markup-language (XML) document, said method steps comprising the steps of  
2 claim 1.
- 3 17. (Original) A computer-readable recording medium comprising the program according to  
4 claim 14.
- 5 18. (Previously presented) A computer program product comprising a program storage device  
6 readable by machine, tangibly embodying a program of instructions for causing XPath  
7 evaluation, the program of instructions in said computer program product for causing a  
8 computer to effect the Xpath evaluating apparatus of claim 5.
- 9 19. - 20. (Canceled)

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**REMARKS**

- 1
- 2 This is in response to the phone discussion with the Examiner, today, Sept. 16, 08, to bring
- 3 allowable matter in the response transmitted on Sept. 5, 08, to issuance.
- 4 The Examiner suggested to bring the limitations of claim 4 into claim 1. This was implemented
- 5 herewith, and claims 2-4 are canceled.
- 6 This should bring claim 1 and Claims 14-16 and 17 which depend on claim 1, to allowance.
- 7 The limitations of claims 6 and 7 were brought into claim 5, and claims 6-7 are canceled.
- 8 This should bring claim 5 and Claim 18 which depends on claim 5, to allowance.
- 9 Claims 8-13 and 19-20 are also canceled.
- 10 Please note Claim 12 was previously amended to include the limitation stated in the office
- 11 communication dated June 5, 08, in Examiner's response to applicants' arguments. As such
- 12 claim 12 should be allowable.
- 13 If the Examiner chooses to allow any claim or claims, **Examiner is authorized to implement**
- 14 **these claim amendments and further cancel any non-allowed claims by Examiner's**
- 15 **amendment in order to bring allowable subject matter to issue.**
- 16 Applicants have amended claims 1 and 5 and canceled some claims from further consideration in
- 17 this application. Applicants are not conceding in this application that the canceled claims are not
- 18 patentable over the art cited by the Examiner, as the present claim amendments and cancellations
- 19 are only for facilitating expeditious prosecution of the allowable subject matter noted by the


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- 1 Examiner. Applicants respectfully reserve the right to pursue these and other claims in one or  
2 more continuations and/or divisional patent applications.
- 3 If any question remains, please contact the undersigned.
- 4 Please charge any fee necessary to enter this paper to deposit account 50-0510.

5 Respectfully submitted,

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